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Summary of the pelagic fish projects carried out within the framework of the Larocque Scientific Program in 2012–2013

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Foreword

This series documents the scientific basis for the evaluation of aquatic resources and ecosystems in Canada. As such, it addresses the issues of the day in the time frames required and the documents it contains are not intended as definitive statements on the subjects addressed but rather as progress reports on ongoing investigations.

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TABLE OF CONTENTS

ABSTRACT IV
RÉSUMÉ V
1. INTRODUCTION 1
2. 2012–2013 PROJECTS 1
2.1. Contracts 1
2.2. Purchases 1
2.3. Travel expenses 2
3. POST-LAROCQUE 2
4. ACKNOWLEDGMENTS 2
5. REFERENCES 2
TABLE 3

ABSTRACT

The Larocque Scientific Program was implemented in 2007 to fund essential science and fisheries management activities. Several pelagic fish projects in the Quebec Region were funded through this program. Projects carried out during the last year (2012–2013) of the Program are presented in this document.

Résumé des projets sur les poissons pélagiques réalisés dans le cadre du programme scientifique Larocque en 2012-2013

RÉSUMÉ

Le Programme scientifique Larocque a été mis en place en 2007 dans le but de financer des activités essentielles pour la science et la gestion des pêches. Plusieurs projets sur les poissons pélagiques de la région du Québec ont été financés par ce programme. Les projets réalisés au cours de la dernière année (2012–2013) du programme sont présentés dans ce document.

1. INTRODUCTION

Between 2008 and 2012, several research projects were carried out on pelagic species by the Department of Fisheries and Oceans (Quebec region, Maurice Lamontagne Institute) within the framework of the Larocque Scientific Program (Grégoire 2012). This program continued in 2012–2013 and the objective of this document is to present the projects carried out during this period. The work that was accomplished under this program had to be mentioned given the substantial funds allocated and the improvement brought by some projects on the pelagic assessments and advice. A lot still had to be done, but the Larocque Scientific Program ended in March 2013.

2. 2012–2013 PROJECTS

2.1. CONTRACTS

Six contracts were awarded in 2012–2013 (Table 1). The first two allowed for the continuation of the herring (*Clupea harengus harengus* L.) and Atlantic mackerel (*Scomber scombrus* L.) tagging program that had begun on the west coast of Newfoundland in the fall of 2009. The first contract was awarded to the Fish & Food and Allied Workers Union (FFAW), whose activities were carried out on board small purse seiners or "tuck" seines in the northern portion of the west coast of Newfoundland. The second contract was awarded to the Fishermen and Scientists Research Society (FSRS), whose tagging activities were carried out on board the Ocean Leader, a large purse seiner owned by Barry Group Inc. in Curling, Newfoundland. Tagging on board this vessel was carried out in the southern portion of the west coast of Newfoundland.

FSRS also received two other contracts. The first consisted in entering Atlantic mackerel-related historical data. This data, unique and therefore highly valuable, were collected in the Magdalen Islands in the early 1960s by the Quebec government. The second contract consisted in purchasing Vemco temperature recorders and deploying them to trap fishers in Nova Scotia. This project is part of a larger study whose objectives are to monitor littoral water temperatures and track catches in some commercial fisheries (e.g. Atlantic mackerel).

The fifth contract was awarded to technical staff in order to digitize images of plankton samples from the Atlantic mackerel egg survey. The objective of this study, which was conducted by colleagues at the Maurice Lamontagne Institute, is to develop a technique to automatically count copepods and thus save many hours of work.

The last contract for the 2012–2013 period was also awarded to technical staff to assist in sorting the plankton samples from the Atlantic mackerel egg survey and in analyzing fish samples (Atlantic mackerel, herring and capelin) from the commercial fisheries. Without this help, stock assessment process deadlines would not have been met.

2.2. PURCHASES

Funds from the Larocque Scientific Program were used to purchase laboratory and field equipment, update and purchase statistical analysis softwares, and maintain and calibrate Bionet and the flowmeters used during the Atlantic mackerel egg survey (Table 1).

A Simrad 200 kHz transducer was purchased for the herring acoustic survey and will also be used for other research projects as the main piece of equipment, as a spare part, or for integration into a portable system.

Atlantic mackerel is one of the Northern Gannet's preferred prey. It was recently noted that the reproductive success of individuals in the Bonaventure Island colony, near Gaspe, had greatly declined because of the nests being abandoned by adults who have to fly greater distances to find food. Moreover, because of the warming of water temperatures, it was suggested that Atlantic mackerel could be in depths that cannot be reached by Northern Gannet when they dive. Funds from the Larocque Scientific Program were used to purchase 40 transmitters to be used for recording dive depths. This research project on Northern Gannet diet and movements is led by Dr. Magella Guillemette of Université du Québec à Rimouski.

Lastly, funds were used for the return of tags that had been placed on Atlantic mackerel and herring in the past few years.

2.3. TRAVEL EXPENSES

Funds from the Larocque Scientific Program were used to cover travel expenses related to the Atlantic mackerel survey and to the participation of an external expert for the capelin (*Mallotus villosus*) peer review (Table 1). The presence of this expert (Dr. Brian Nakashima, from the St. John's DFO office) was greatly appreciated. Lastly, funds from the Larocque Scientific Program were used to collect Atlantic mackerel samples on the east coast of Newfoundland. The participation of our colleagues from the St. John's DFO office in this project was exemplary.

3. POST-LAROCQUE

In April 2013, the Larocque Scientific Program was replaced by a new program ("Use of Fish") with the same objectives, but with different funding sources. The funds will now come from selling fish caught under regular fishing quotas. In the winter of 2013, negotiations were held with the key pelagic fishing industry members of the west coast of Newfoundland who were involved in the Larocque projects. For now, no agreement has been reached because some of these participants do not agree with the principle of using revenues from their fisheries to support research projects. Further discussions will take place in the coming months.

4. ACKNOWLEDGMENTS

Very sincere thanks go out to everyone involved in conducting the Larocque projects since 2008. Your participation was much appreciated. The authors would like also to thank Denis Bernier and Jean-Paul Dallaire for the review of this document.

5. REFERENCES

Grégoire, F. 2012. Summary of the pelagic fish projects carried out within the framework of the Larocque Scientific Program between 2008 and 2012. DFO Can. Sci. Advis. Sec. Res. Doc. 2012/128. iv + 20 p.

TABLE

Table 1. Summary of pelagic fish projects carried out within the framework of the Larocque Scientific Program in 2012–2013.

TYPE OF EXPENSES	DESCRIPTION OF THE EXPENSES IN 2012–2013 (last year of the Larocque Scientific Program)	SPECIES*
CONTRACT	1. Tagging activities aboard small purse seiners and "tuck" seines (FFAW)	H+M
CONTRACT	2. Tagging activities aboard a large purse seiner (FSRS)	H+M
CONTRACT	3. Entry of historical data (FSRS)	M
CONTRACT	4. Purchase and deployment of Vemco Minilog thermographs for monitoring water temperature in Nova Scotia (FSRS)	M
CONTRACT	5. Digitization of plankton samples for the automatic counting of copepods (technician)	C+H+M
CONTRACT	6. Support for plankton sorting and analysis of commercial samples (technician)	C+H+M
PURCHASE	1. Laboratory equipment and updating of statistical analysis softwares	C+H+M
PURCHASE	2. Bionet maintenance and calibration of the flowmeters used during the Atlantic mackerel egg survey	M
PURCHASE	3. Simrad 200 kHz transducer for the acoustic herring survey and other projects	H
PURCHASE	4. Transmitters for recording dive depths of Northern Gannet	M
PURCHASE	5. Rewards for the return of tags	H+M
TRAVEL	1. Expenses for the Atlantic mackerel egg survey	M
TRAVEL	2. Expenses for the participation of an expert to the capelin peer review	C
TRAVEL	3. Samples from the east coast of Newfoundland	M

* C= Capelin, H = Herring, M = Atlantic mackerel